



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,674	04/02/2004	Hoi-Sing Kwok	016660-215	9762
21839	7590	12/19/2005	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			KEANEY, ELIZABETH MARIE	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/815,674	KWOK ET AL.	
	Examiner	Art Unit	
	Elizabeth Keaney	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

Figure 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 7. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

Art Unit: 2882

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The use of the trademark Vikuti (page 8, line 3) has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

Claim 1 is objected to because of the following informalities:

- line 8: "layer the first"; should be --layer on the first--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2882

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the forward direction" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamano et al. (US Patent 4,767,965; hereinafter Yamano) in view of Murata et al. (US Patent 6,611,099; hereinafter Murata).

Re claim 1: Yamano discloses, in figure 3 and throughout the disclosure, a planar light source comprising:

- a glass cell comprising first (10) and second (16) glass walls,
- a low pressure gaseous mixture inside the glass cell (column 3, lines 65-67);
- a means for striking a gas discharge inside the gas cell (14), the gas discharge being capable of producing ultraviolet photons,

Art Unit: 2882

- an optically reflecting coating (50) on the first glass wall adapted to reflect visible light,
- a phosphor layer (24) on the first glass wall which is capable of converting ultraviolet photons into visible light.

However, Yamano fails to teach or fairly suggest an optical coating on the inside of the second glass wall which reflects substantially all ultraviolet light and transmits substantially all visible light.

Murata discloses, in figure 19 and throughout the disclosure, a planar light source wherein an optical coating (19) is deposited on the inside of a second glass wall (11) which reflects substantially all ultraviolet light and transmits substantially all visible light.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the optical coating of Murata within the device of Yamano because it increases the efficiency of the device by reflecting the UV light not converted into visible light by the phosphor, thereby reducing the power consumption of the device.

Re claim 5: Yamano discloses, in figure 3 and throughout the disclosure, the means of striking a gas discharge comprises a pair of electrodes (30,28) through the side of the glass cell.

Art Unit: 2882

Re claim 6: Yamano discloses the means for striking a gas discharge in comprises a radio frequency source located outside of the glass cell (column 3, lines 13-14).

Re claim 7: Yamano discloses the gaseous mixture comprises a mixture of inert gases and mercury or compounds of mercury (column 3, lines 64-66).

Re claim 8: Yamano discloses, in figure 3 and throughout the disclosure, a heating device (44) for raising the cell temperature to above 30 degrees C (column 4, line 53).

Re claim 9: Yamano discloses, in figure 3 and throughout the disclosure, the phosphor layer (24) is continuous over the surface of the first glass wall (10).

Re claim 10: Yamano discloses, in figure 3 and throughout the disclosure, the phosphor layer (24) is patterned over the surface of the first glass wall (10).

Re claim 11: Yamano discloses the first and second glass walls being spaced apart by a distance of at least 0.5mm (column 8, line 5).

Claim Rejections - 35 USC § 103

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamano and Murata as applied to claim 1 above, and further in view of Kaneko (US Patent 6,295,108).

Yamano and Murata teach all the limitations as shown above.

However, they fail to teach or fairly suggest a sheet type reflecting polarizer, a quarter wave retardation plate and a light scattering film.

Kaneko discloses, in figure 17 and throughout the disclosure, a planar light source comprising:

- a sheet type reflecting polarizer (22) placed on the outside of a second glass wall (63), the reflecting polarizer being adapted to reflect linearly polarized light of one polarization and to transmit linearly polarized light of a perpendicular polarization (column 20, line 57-61);
- a quarter wave retardation plate (9) placed on an exterior surface of the second glass wall (63) between the glass wall and the polarizer (22); and
- a light scattering film (7) on top of the reflecting polarizer than can limit the angle of emission of the light to be predominately in the forward direction.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the light source disclosed by Yamano and Murata with the polarizer, quarter wave retardation plate and the light scattering film because it increases the brightness of the light source without increasing the power consumption of the device.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Keaney whose telephone number is (571)272-2489. The examiner can normally be reached on Monday, Tuesday, Thursday, Friday 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571)272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Elizabeth Keaney
Examiner
Art Unit 2882


EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER